

# Dissimilar Double Triode

**6GF7-A**

**FOR TV VERTICAL-DEFLECTION OSCILLATOR  
AND AMPLIFIER APPLICATIONS**

■ COLOR TV TYPE

■ T-9 ENVELOPE

■ DISSIMILAR DOUBLE TRIODE

The 6GF7-A is a dissimilar double triode designed for use as a combined vertical-deflection oscillator and amplifier in television receivers. Section one, a high- $\mu$  triode, is intended for service as an oscillator; section two, a low- $\mu$ , high-perveance triode, for service as an amplifier.

The 6GF7-A utilizes a T-9 bulb and features a 9-pin glass button base with a 0.687-inch circle.

## GENERAL

### ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC\* .....  $6.3 \pm 0.6$  Volts

Heater Current\* ..... 0.985 Amperes

Direct Interelectrode Capacitances, approximate

#### Section 1 Section 2

Grid to Plate: (g to p) ..... 4.6 9.0 pf

Input: g to (h+k) ..... 2.4 6.5 pf

Output: p to (h+k) ..... 0.26 1.4 pf

### MECHANICAL

Operating Position - Any

Envelope - T-9, Glass

Base - E9-89, Button 9-Pin

Outline Drawing - EIA 9-108

Maximum Diameter ..... 1.188 Inches

Minimum Diameter ..... 1.062 Inches

Maximum Over-all Length ..... 2.630 Inches

Maximum Seated Height ..... 2.250 Inches

Minimum Seated Height ..... 2.000 Inches

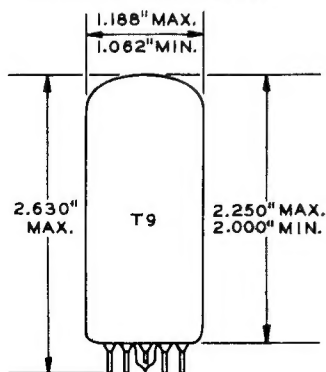
## MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

### PHYSICAL DIMENSIONS

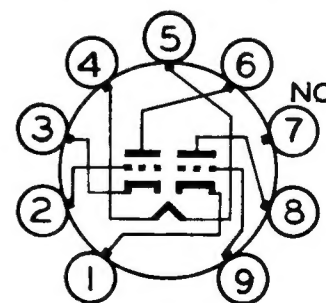


EIA 9-108

### TERMINAL CONNECTIONS

- Pin 1 - Cathode (Section 1)
- Pin 2 - Grid (Section 2)
- Pin 3 - Cathode (Section 2)
- Pin 4 - Heater
- Pin 5 - Heater
- Pin 6 - Plate (Section 2)
- Pin 7 - No Connection
- Pin 8 - Plate (Section 1)
- Pin 9 - Grid (Section 1)

### BASING DIAGRAM



EIA 9QD

## MAXIMUM RATINGS (Cont'd)

## DESIGN-MAXIMUM VALUES

	Vertical Oscillator Service $\Delta$ (Section 1)	Vertical Deflection Amplifier $\Delta$ (Section 2)	
DC Plate Voltage.....	330	330	Volts
Peak Positive Pulse Plate Voltage.....	—	1500 $\oplus$	Volts
Peak Negative Grid Voltage.....	400	250	Volts
Plate Dissipation.....	1.5	11 $\square$	Watts
DC Cathode Current.....	22	50	Milliamperes
Peak Cathode Current.....	77	175	Milliamperes
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component.....	100	100	Volts
Total DC and Peak.....	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak.....	200	200	Volts
Grid Circuit Resistance			
With Cathode Bias.....	2.2	2.2	Megohms

## CHARACTERISTICS AND TYPICAL OPERATION

## AVERAGE CHARACTERISTICS

	Section 1 (Oscillator)	Section 2 (Amplifier)	
Plate Voltage.....	250	60 150	Volts
Grid Voltage.....	-3.0	0 $\S$ -20	Volts
Amplification Factor.....	64	— 5.4	
Plate Resistance, approximate.....	40000	— 750	Ohms
Transconductance.....	1600	— 7200	Micromhos
Plate Current.....	1.4	95 50	Milliamperes
Plate Current, approximate			
$E_c = -28$ Volts.....	—	— 10	Milliamperes
Grid Voltage, approximate			
$I_b = 10$ Microamperes.....	-5.5	— —	Volts
Grid Voltage, approximate			
$I_b = 100$ Microamperes.....	—	— -45	Volts

## NOTES

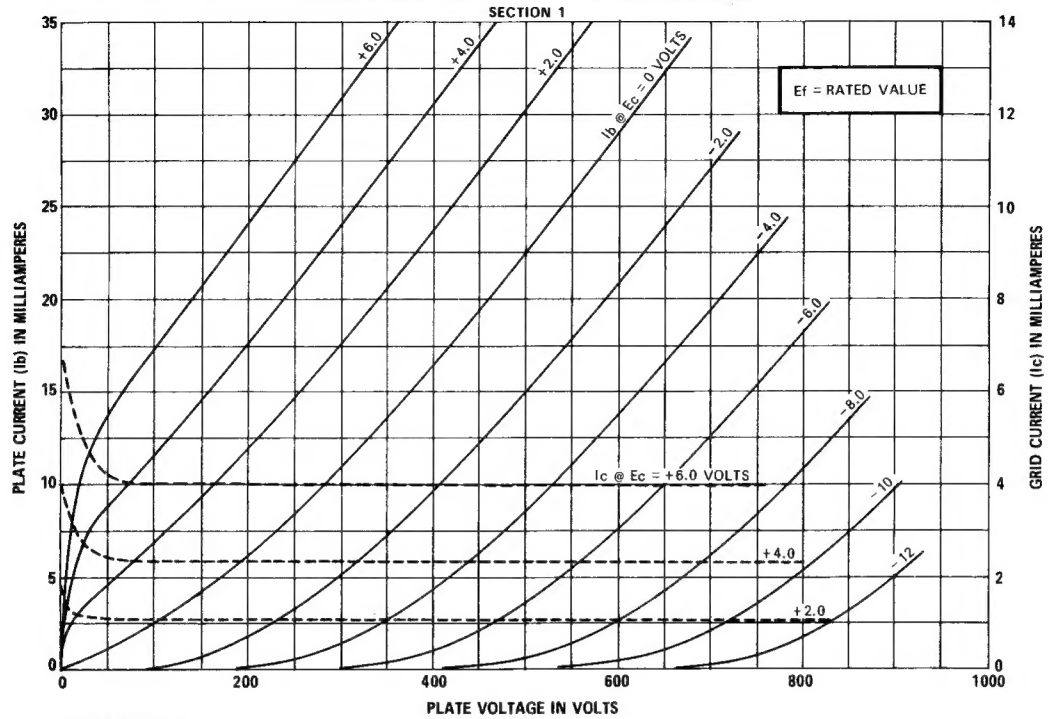
- ★ The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
- ◆ Heater current of a bogey tube at  $E_f = 6.3$  volts.
- ◆ Without external shield.
- ▲ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

$\oplus$  Value given is to be considered as an Absolute-Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation, including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

$\square$  In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

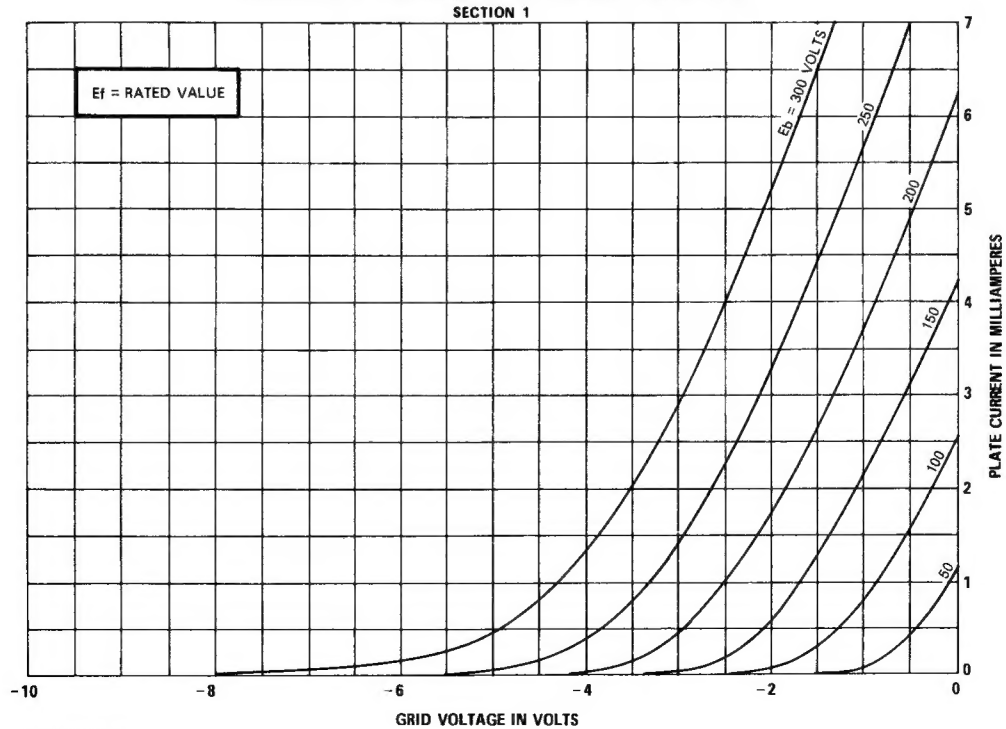
$\S$  Applied for short interval (two seconds maximum) so as not to damage tube.

## AVERAGE PLATE CHARACTERISTICS



K-55611-TD222-1A

## AVERAGE TRANSFER CHARACTERISTICS

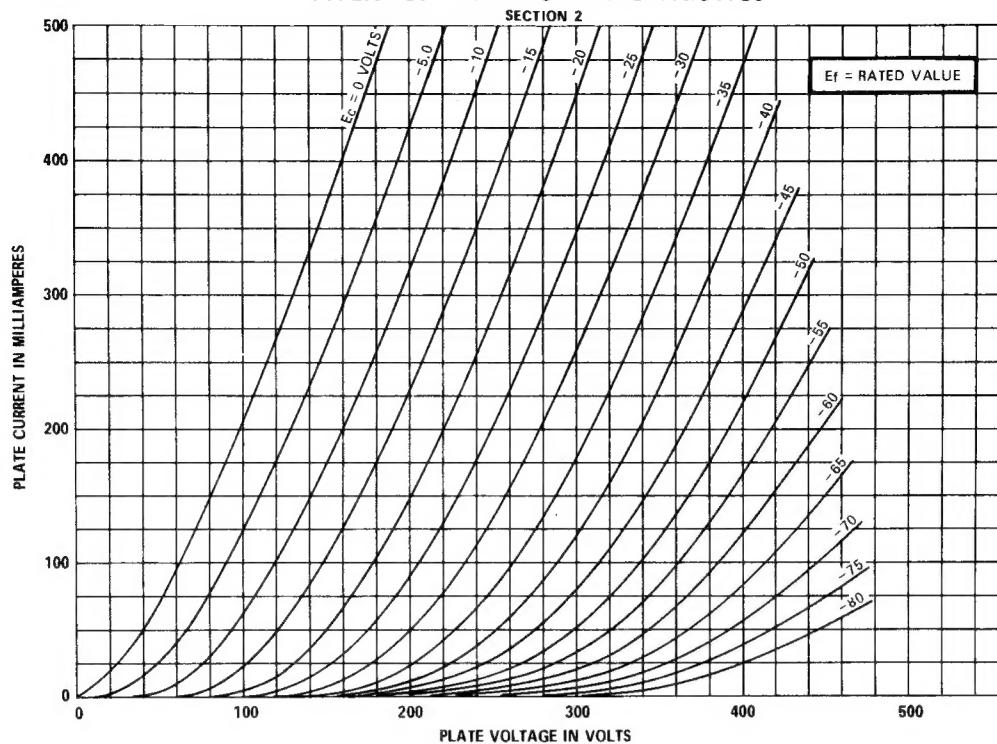


K-55611-TD 222-2A

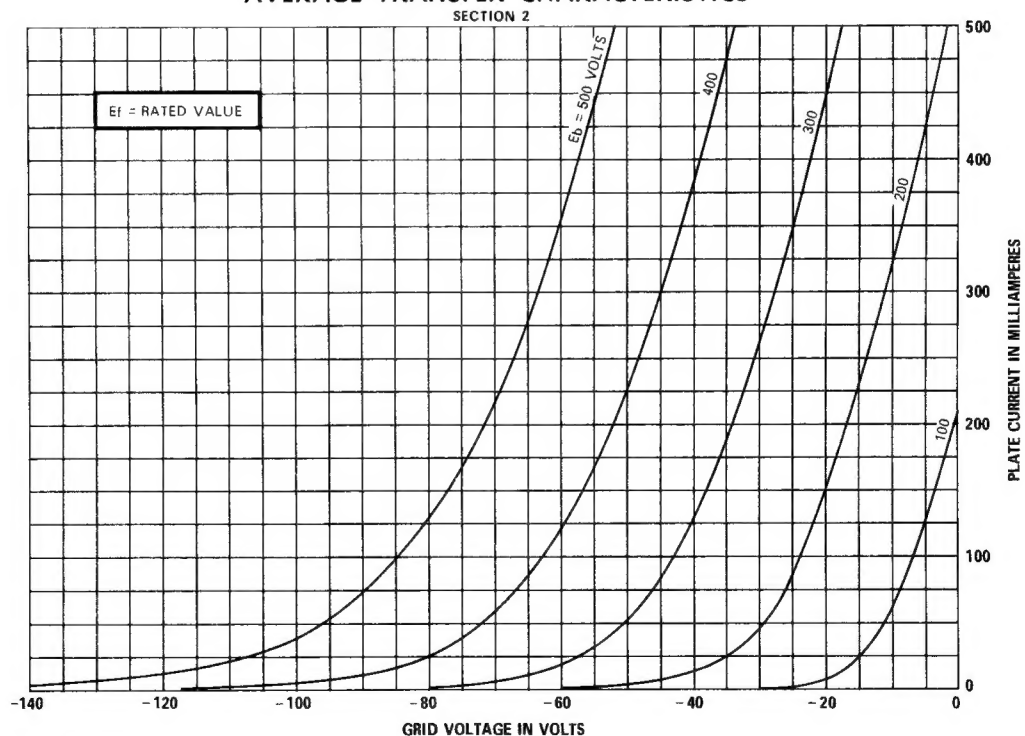
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## AVERAGE PLATE CHARACTERISTICS



## AVERAGE TRANSFER CHARACTERISTICS



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GENERAL  ELECTRIC